New Product

MSS1P5 & MSS1P6

Vishay General Semiconductor

# **Surface Mount Schottky Barrier Rectifiers**



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	1.0 A				
V <sub>RRM</sub>	50 V, 60 V				
I <sub>FSM</sub>	25 A				
V <sub>F</sub> at I <sub>F</sub> = 1.0 A	0.52 V				
T <sub>J</sub> max.	150 °C				

### **TYPICAL APPLICATIONS**

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

## FEATURES

- Very low profile typical height of 0.68 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
  COMPLIANT
  COMPLIANT
- High efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- Halogen-free

## **MECHANICAL DATA**

### Case: MicroSMP

Molding compound meets UL 94V-0 flammability rating.

Base P/N-E3 - RoHS compliant, commercial grade

Base  $\ensuremath{\mathsf{P/N-M3}}$  - halogen-free and RoHS compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	MSS1P5	MSS1P6	UNIT	
Device marking code		15	16		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	60	V	
Maximum average forward rectified current (Fig. 1)	I <sub>F(AV)</sub>	1.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	25		А	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150		°C	



HALOGEN

FREE



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \degree C$ unless otherwise noted)						
PARAMETER	TEST C	TEST CONDITIONS		TYP.	MAX.	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 0.5 A I <sub>F</sub> = 1.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.45 0.56	- 0.68	V
	I <sub>F</sub> = 0.5 A I <sub>F</sub> = 1.0 A	T <sub>J</sub> = 125 °C		0.40 0.52	- 0.60	
Maximum reverse current (2)	rated V <sub>R</sub>	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	20 7.0	150 12	μA mA
Typical junction capacitance	4.0 V, 1 M⊦	4.0 V, 1 MHz		40	-	pF

#### Notes:

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width  $\leq$  40 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \degree C$ unless otherwise noted)					
PARAMETER	SYMBOL	MSS1P5	MSS1P6	UNIT	
Typical thermal resistance <sup>(1)</sup>	${f R}_{ heta JA} \ {f R}_{ heta JL} \ {f R}_{ heta JC}$	125 30 40		°C/W	

#### Note:

(1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 6.0 x 6.0 mm copper pad areas R<sub>0JL</sub> is measured at the terminal of cathode band. R<sub>0JC</sub> is measured at the top center of the body

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
MSS1P6-E3/89A	0.006	89A	4500	7" diameter plastic tape and reel		
MSS1P6-M3/89A	0.006	89A	4500	7" diameter plastic tape and reel		

### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)



Figure 1. Maximum Forward Current Derating Curve



Figure 2. Forward Power Loss Characteristics



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Figure 3. Typical Instantaneous Forward Characteristics







Figure 5. Typical Junction Capacitance



Figure 6. Typical Transient Thermal Impedance

### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



For technical questions within your region, please contact one of the following: PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com



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